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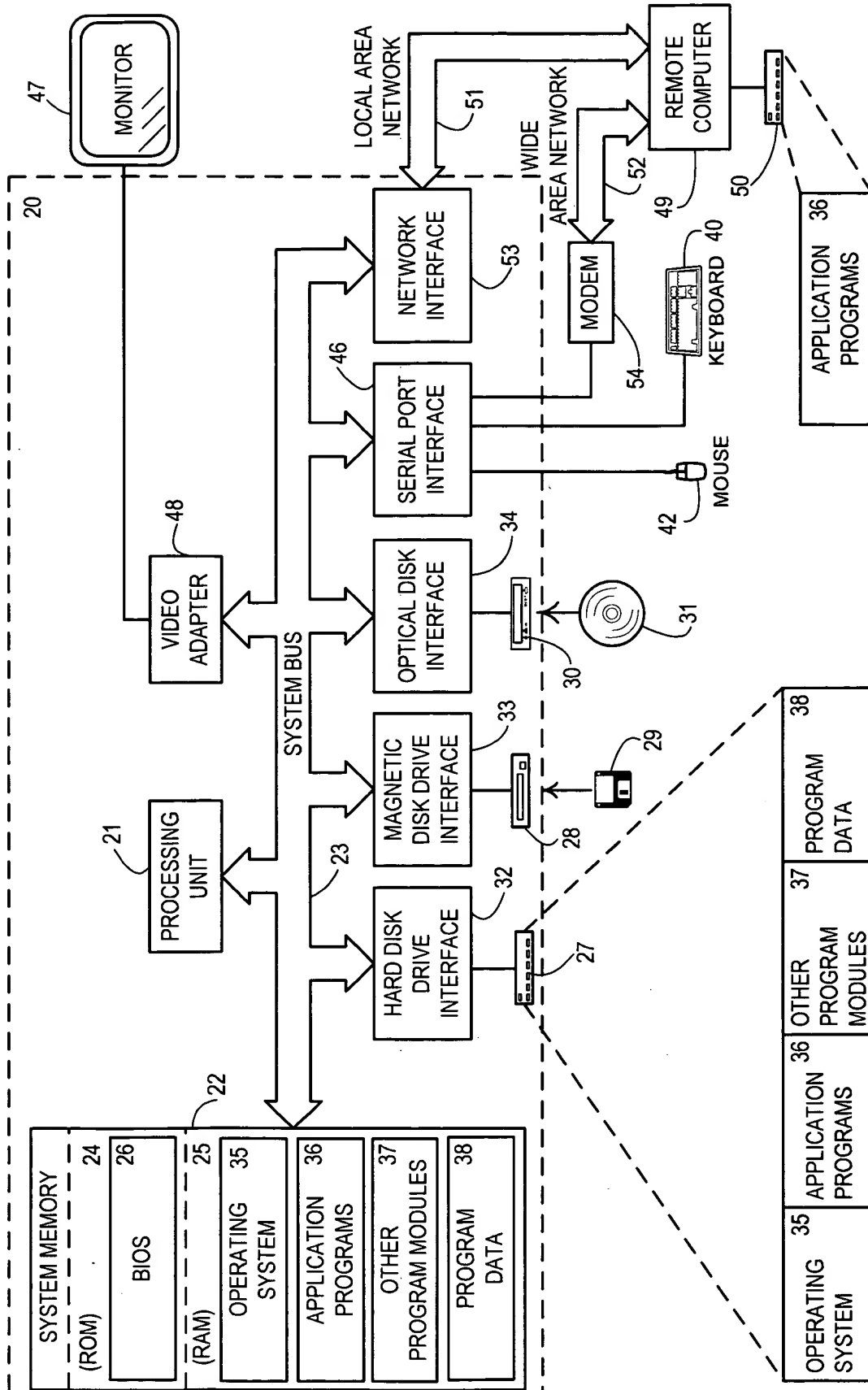


FIG. 1



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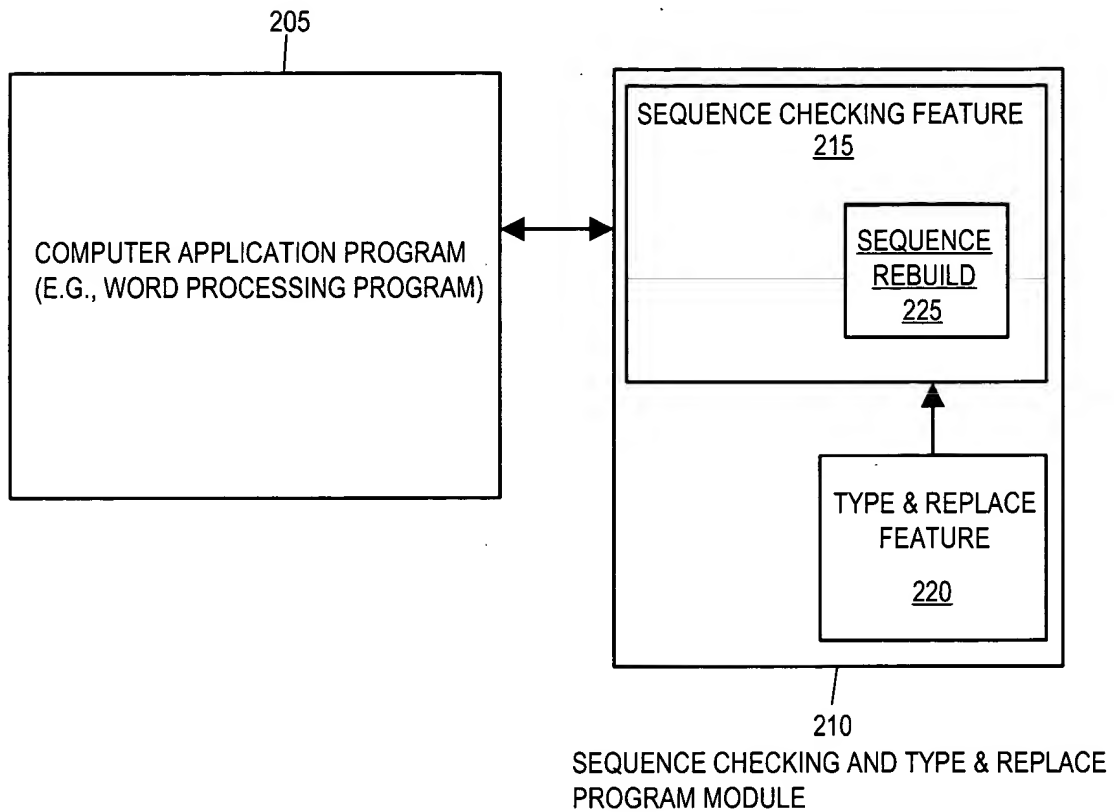


FIG. 2

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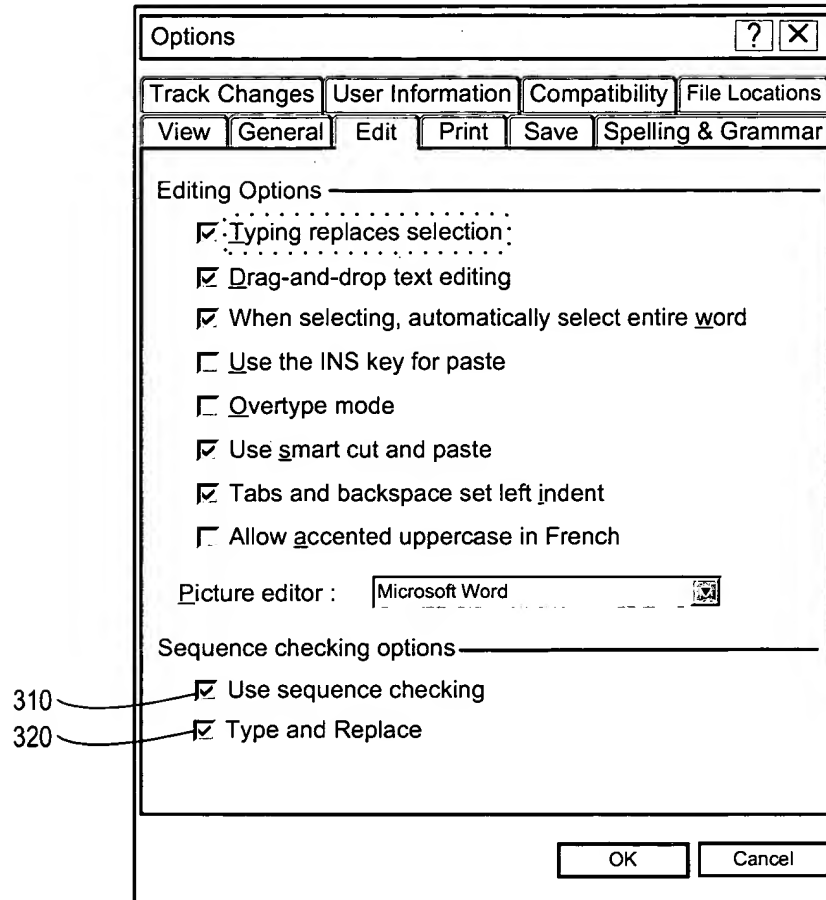
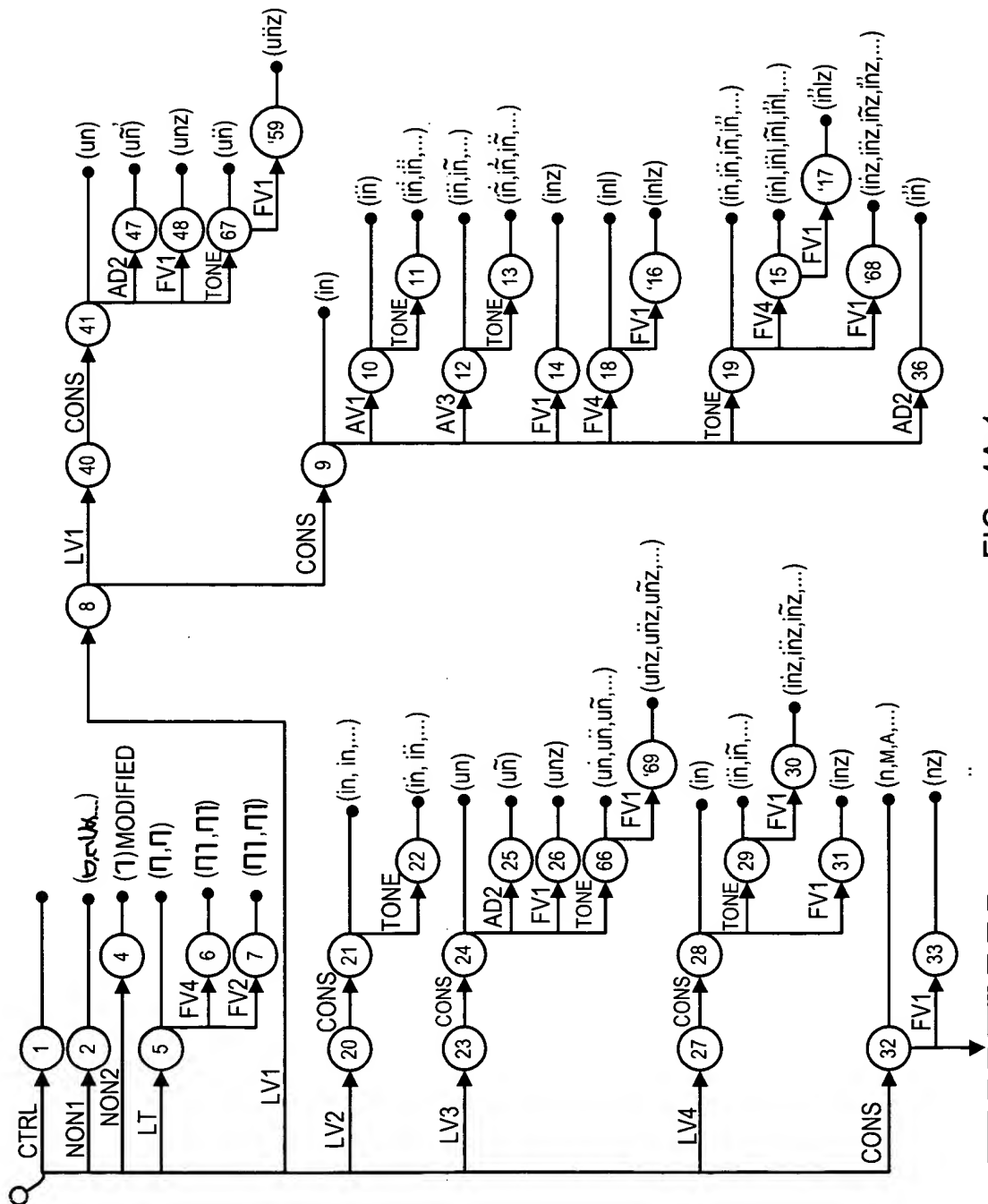


FIG. 3

| CHARACTER   |       | 0 | CTRL | Space | NON1 | NON2 | LT | LV1     | LV2  | LV3  | LV4  | CONS | TONE     | AD1      | AD2    |
|-------------|-------|---|------|-------|------|------|----|---------|------|------|------|------|----------|----------|--------|
| CONTEXT     | STATE |   |      |       |      |      |    |         |      |      |      |      |          |          |        |
| initial     | 0     | 0 | 1a   | 3a    | 2a   | *4a  | 5a | 8A      | 20a  | 23a  | 27a  | 32a  |          |          |        |
| CTRL        | 1     | 0 |      |       |      |      |    |         |      |      |      |      |          |          |        |
| NON1        | 2     | 0 |      |       |      |      |    |         |      |      |      |      |          |          |        |
| Space       | 3     | 0 |      |       |      | *4a  |    |         |      |      |      |      |          |          |        |
| N2          | 4     | 0 |      |       |      |      |    |         |      |      |      |      |          |          |        |
| LT          | 5     | 0 |      |       |      |      |    |         |      |      |      |      |          |          |        |
| LTFV4       | 6     | 0 |      |       |      |      |    |         |      |      |      |      |          |          |        |
| LTFV2       | 7     | 0 |      |       |      |      |    |         |      |      |      |      |          |          |        |
| LV1         | 8     |   |      |       |      |      |    | 40aCa23 | 20r  | 23r  | 27r  | 9a   |          |          |        |
| LV1C        | 9     | 0 |      |       |      |      |    |         |      |      |      |      | 19a      | 37d2a    | 36a    |
| LV1CAV1     | 10    | 0 |      |       |      |      |    |         |      |      |      |      | 11a      | *48d3a   | 36r    |
| LV1CAV1T    | 11    | 0 |      |       |      |      |    |         |      |      |      |      | 11r      | *46d4r   | 36dr   |
| LV1CAV3     | 12    | 0 |      |       |      |      |    |         |      |      |      |      | 13a      | 37d3r    | 36r    |
| LV1CAV3T    | 13    | 0 |      |       |      |      |    |         |      |      |      |      | 13r      | 37d4dr   | 36dr   |
| LV1CFV1     | 14    | 0 |      |       |      |      |    |         |      |      |      |      | 19r      | 37d3r    | 36r    |
| LV1CTFV4    | 15    | 0 |      |       |      |      |    |         |      |      |      |      | 15r2     | 37d4dr   | 36dr   |
| LV1CFV4FV1  | 16    | 0 |      |       |      |      |    |         |      |      |      |      | 17r2     | 37d3r    | 36dr   |
| LV1CTFV4FV1 | 17    | 0 |      |       |      |      |    |         |      |      |      |      | 17r3     | 37d5dr   | 36ddr  |
| LV1CFV4     | 18    | 0 |      |       |      |      |    |         |      |      |      |      | 15r1     | 37d3r    | 36r    |
| LV1CT       | 19    | 0 |      |       |      |      |    |         |      |      |      |      | 18r      | 37d3r    | 36r    |
| LV2         | 20    |   |      |       |      |      |    | 8r      | 20r  | 23r  | 27r  | 21a  |          |          |        |
| LV2C        | 21    | 0 |      |       |      |      |    |         |      |      |      |      | 22a      | 37d2a    | 38d2a  |
| LV2CT       | 22    | 0 |      |       |      |      |    |         |      |      |      |      | 22r      | 37d3r    | 38d3r  |
| LV3         | 23    |   |      |       |      |      |    | 8r      | 20r  |      | 27r  | 24a  |          |          |        |
| LV3C        | 24    | 0 |      |       |      |      |    |         |      |      |      |      | 66a      | 37d2a    | 25a    |
| LV3CAD2     | 25    | 0 |      |       |      |      |    |         |      |      |      |      | 66r      | 37d3r    |        |
| LV3CFV1     | 26    | 0 |      |       |      |      |    |         |      |      |      |      | *69r     | 37d3r    | 25r    |
| LV4         | 27    |   |      |       |      |      |    | 8r      | 20r  | 23r  |      | 28a  |          |          |        |
| LV4C        | 28    | 0 |      |       |      |      |    |         |      |      |      |      | 29a      | 37d2a    | 38d2a  |
| LV4CT       | 29    | 0 |      |       |      |      |    |         |      |      |      |      | 29r      | 37d3r    | 38d3r  |
| LV4CTFV1    | 30    | 0 |      |       |      |      |    |         |      |      |      |      | 30r2     | 37d4dr   | 38d4dr |
| LV4CFV1     | 31    | 0 |      |       |      |      |    |         |      |      |      |      | 30r1     | 37d3r    | 38d3r  |
| C           | 32    | 0 |      |       |      |      |    |         |      |      |      |      | 60a      | 37a      | 38a    |
| CFV1        | 33    | 0 |      |       |      |      |    |         |      |      |      |      | 61r1     | 37r      | 38r    |
| CFV3        | 34    | 0 |      |       |      |      |    |         |      |      |      |      | 62r1     | 37r      | 38r    |
| CFV4        | 35    | 0 |      |       |      |      |    |         |      |      |      |      | 63r1     | 37r      | 38r    |
| LV1CAD2     | 36    | 0 |      |       |      |      |    |         |      |      |      |      | *19r     | 37d3r    |        |
| CAD1        | 37    | 0 |      |       |      |      |    |         |      |      |      |      | 60r      |          | 38r    |
| CAD2        | 38    | 0 |      |       |      |      |    |         |      |      |      |      | 60r      | 37r      |        |
| CAD3        | 39    | 0 |      |       |      |      |    |         |      |      |      |      | 60r      | 37r      | 38r    |
| LV1LV1      | 40    |   |      |       |      |      |    |         | 20dr | 23dr | 27dr | 41a  |          |          |        |
| LV1LV1C     | 41    | 0 |      |       |      |      |    |         |      |      |      |      | 67a      | 37d3d2a  | 47a    |
| CAD3FV4     | 42    | 0 |      |       |      |      |    |         |      |      |      |      | 62r2FV3r | 37dr     | 38dr   |
| CAD4        | 43    | 0 |      |       |      |      |    |         |      |      |      |      | 60r      | 37r      | 38r    |
| CAV1        | 44    | 0 |      |       |      |      |    |         |      |      |      |      | 45a      | 46a      | 38r    |
| CAV1T       | 45    | 0 |      |       |      |      |    |         |      |      |      |      | 45r      | 46r      | 38dr   |
| CAV1AD1     | 46    | 0 |      |       |      |      |    |         |      |      |      |      | 45r      |          | 38dr   |
| LV1LV1CAD2  | 47    | 0 |      |       |      |      |    |         |      |      |      |      | 67r      | 37d4d3r  |        |
| LV1LV1CFV1  | 48    | 0 |      |       |      |      |    |         |      |      |      |      | *59r     | 37d4d3r  | 47r    |
| CAV2        | 49    | 0 |      |       |      |      |    |         |      |      |      |      | 50a      | 37r      | 38r    |
| CAV2T       | 50    | 0 |      |       |      |      |    |         |      |      |      |      | 50r      | 37dr     | 38dr   |
| CAV3        | 51    | 0 |      |       |      |      |    |         |      |      |      |      | 52a      | 37r      | 38r    |
| CAV3T       | 52    | 0 |      |       |      |      |    |         |      |      |      |      | 52r      | 37dr     | 38dr   |
| CAV4        | 53    | 0 |      |       |      |      |    |         |      |      |      |      | 54a      | 37r      | 38r    |
| CAV4T       | 54    | 0 |      |       |      |      |    |         |      |      |      |      | 54r      | 37dr     | 38dr   |
| CBD         | 55    | 0 |      |       |      |      |    |         |      |      |      |      | 60r      | 37r      | 38r    |
| CBV1        | 56    | 0 |      |       |      |      |    |         |      |      |      |      | 57a      | 58a      | 38r    |
| CBV1T       | 57    | 0 |      |       |      |      |    |         |      |      |      |      | 57r      | 58r      | 38dr   |
| CBV1AD1     | 58    | 0 |      |       |      |      |    |         |      |      |      |      | 57r      |          | 38dr   |
| LV1LV1CTFV1 | 59    | 0 |      |       |      |      |    |         |      |      |      |      | 59r2     | 37d5d4dr | 47dr   |
| CT          | 60    | 0 |      |       |      |      |    |         |      |      |      |      | 60r      | 37r      | 38r    |
| CTFV1       | 61    | 0 |      |       |      |      |    |         |      |      |      |      | 61r2     | 37dr     | 38dr   |
| CTFV3       | 62    | 0 |      |       |      |      |    |         |      |      |      |      | 62r2     | 37dr     | 38dr   |
| CTFV4       | 63    | 0 |      |       |      |      |    |         |      |      |      |      | 63r2     | 37dr     | 38dr   |
| CBV2        | 64    | 0 |      |       |      |      |    |         |      |      |      |      | 65a      | 37r      | 38r    |
| CBV2T       | 65    | 0 |      |       |      |      |    |         |      |      |      |      | 65r      | 37dr     | 38dr   |
| LV3CT       | 66    | 0 |      |       |      |      |    |         |      |      |      |      | 66r      | 37d3r    | 25r    |
| LV1LV1CT    | 67    | 0 |      |       |      |      |    |         |      |      |      |      | 67r      | 37d4d3r  | 47r    |
| LV1CTFV1    | 68    | 0 |      |       |      |      |    |         |      |      |      |      | 68r2     | 37d4dr   | 36dr   |
| LV3CTFV1    | 69    | 0 |      |       |      |      |    |         |      |      |      |      | 69r2     | 37d4dr   | 25dr   |
| CFV4FV1     | 70    | 0 |      |       |      |      |    |         |      |      |      |      | 63dr1    | 37dr     | 38dr   |

FIG. 4-1





**FIG. 4A-1**

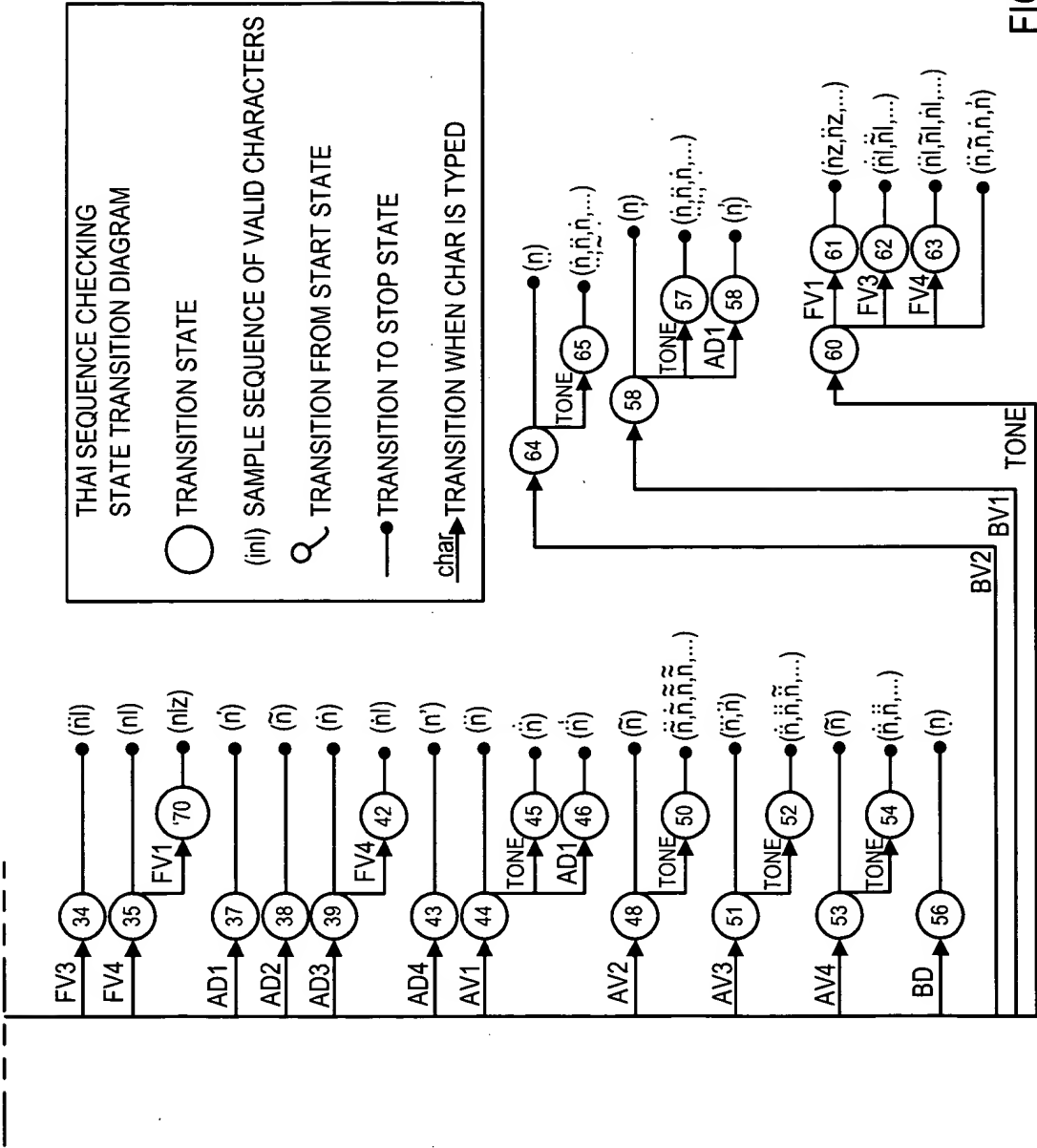


FIG. 4A-2

| CHARACTER  |       | { } | ind_c<br>hars | abbr     | delimit | number   | ind_vo<br>wel | norm_<br>conso | ext_<br>conso | virama | nukta | dep_vo<br>wel | vow el<br>_sign | accent | zerow<br>idth<br>chars<br>Zw |
|------------|-------|-----|---------------|----------|---------|----------|---------------|----------------|---------------|--------|-------|---------------|-----------------|--------|------------------------------|
| CONTEXT    | STATE |     |               |          |         |          |               |                |               |        |       |               |                 |        |                              |
| initial    | 0     | 0   | ic<br>1a      | Ab<br>2a | D<br>3a | Nb<br>4a | iv<br>5a      | Nc<br>9a       | Ec<br>10a     | V      | Na    | Dv            | Vs              | Ac     |                              |
| ic         | 1     | 0   |               |          |         |          |               |                |               |        |       |               |                 |        |                              |
| Ab         | 2     | 0   |               |          |         |          |               |                |               |        |       |               |                 |        |                              |
| D          | 3     | 0   |               |          |         |          |               |                |               |        |       |               |                 |        |                              |
| Nb         | 4     | 0   |               |          |         |          |               |                |               |        |       |               |                 |        |                              |
| iv         | 5     | 0   |               |          |         |          |               |                |               |        |       |               | 7a              | 6a     |                              |
| ivAc       | 6     | 0   |               |          |         |          |               |                |               |        |       |               | 8i1             | 6r1    |                              |
| ivVs       | 7     | 0   |               |          |         |          |               |                |               |        |       |               | 7r1             | 8a     |                              |
| ivVsAc     | 8     | 0   |               |          |         |          |               |                |               |        |       |               | 8r2             | 8r1    |                              |
| Nc         | 9     | 10  |               |          |         |          |               |                |               |        | 10a   |               |                 |        |                              |
| NcNa       | 10    | 0   |               |          |         |          |               |                |               | 11a    |       | 14a           | 18a             | 20a    | 12a                          |
| NcNaV      | 11    | 12  |               |          |         |          |               |                |               |        |       |               |                 |        |                              |
| NcNaVZc    | 12    | *   |               |          |         |          |               | 13a            | 10a           |        |       |               |                 |        |                              |
| NcNaVZNc   | 13    | 10  |               |          |         |          |               |                |               |        | 10a   |               |                 |        |                              |
| NcNaDv     | 14    | 0   |               |          |         |          |               |                |               |        |       | 14r1          | 16a             | 15a    |                              |
| NcNaDvAc   | 15    | 0   |               |          |         |          |               |                |               |        |       | 15r2          | 17i1            | 15r1   |                              |
| NcNaDvVs   | 16    | 0   |               |          |         |          |               |                |               |        |       | 16r2          | 16r1            | 17a    |                              |
| NcNaDvVsAc | 17    | 0   |               |          |         |          |               |                |               |        |       | 17r3          | 17r2            | 17r1   |                              |
| NcNaVs     | 18    | 0   |               |          |         |          |               |                |               |        |       | 16i1          | 18r1            | 19a    |                              |
| NcNaVsAc   | 19    | 0   |               |          |         |          |               |                |               |        |       | 17i2          | 19r2            | 19r1   |                              |
| NcNaAc     | 20    | 0   |               |          |         |          |               |                |               |        |       | 15i1          | 19i1            | 20r1   |                              |



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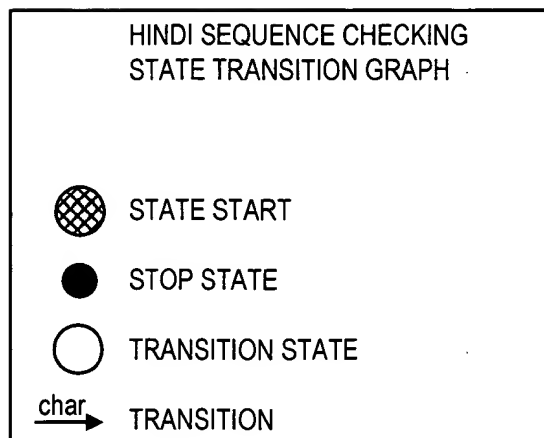
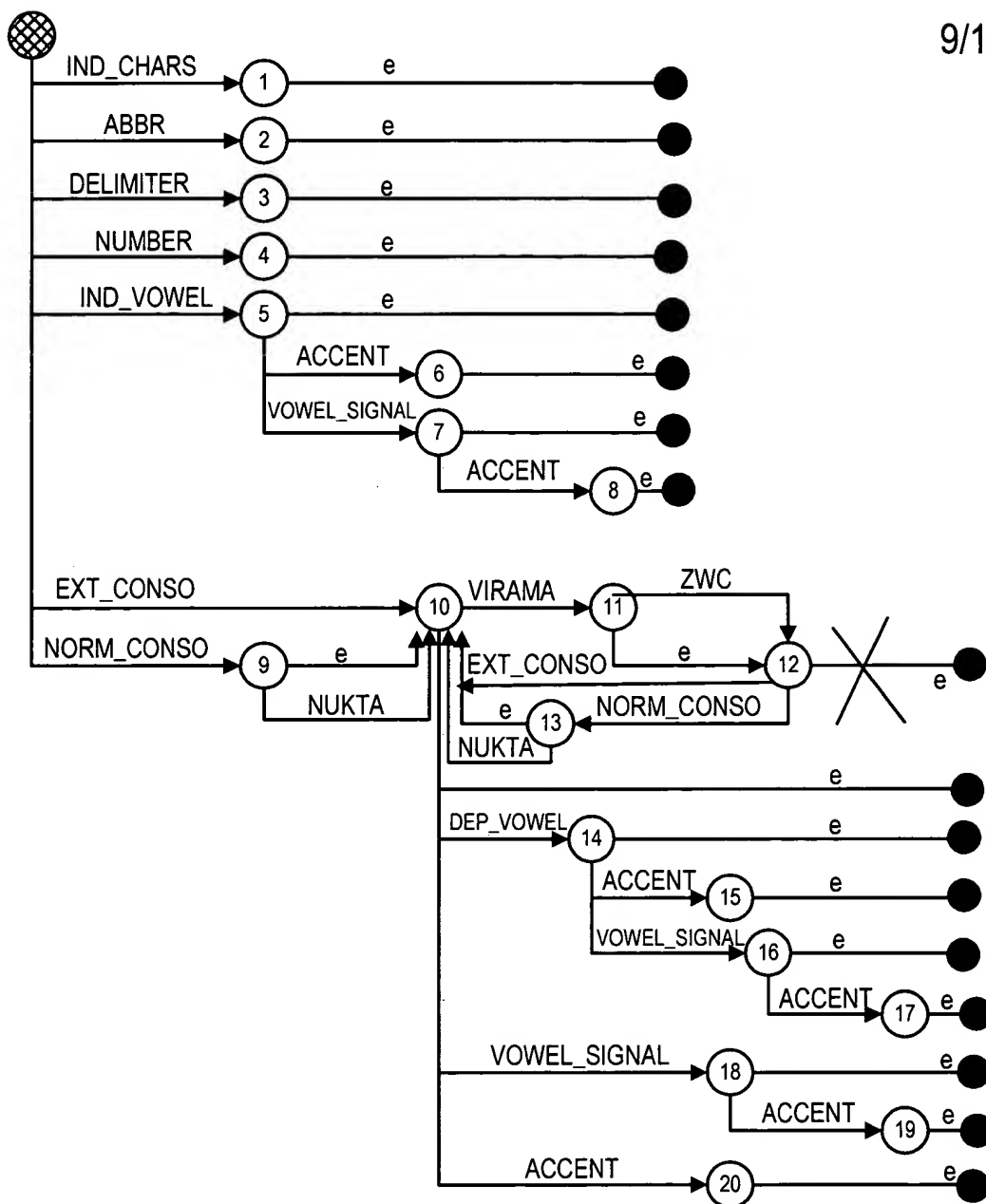


FIG. 5A

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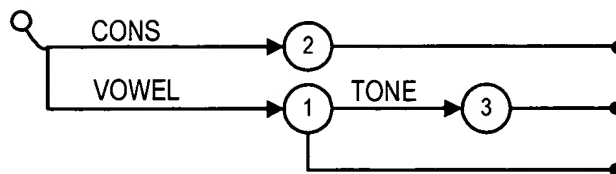


FIG. 6A

| CHARACTER |       | { } | VOWEL | TONE | CONS |
|-----------|-------|-----|-------|------|------|
| CONTEXT   | STATE |     | V     | T    | C    |
| initial   | 0     | 0   | 1a    |      | 2a   |
| V         | 1     | 0   |       | 3a   |      |
| C         | 2     | 0   |       |      |      |
| VT        | 3     | 0   |       | 3r   |      |

FIG. 6

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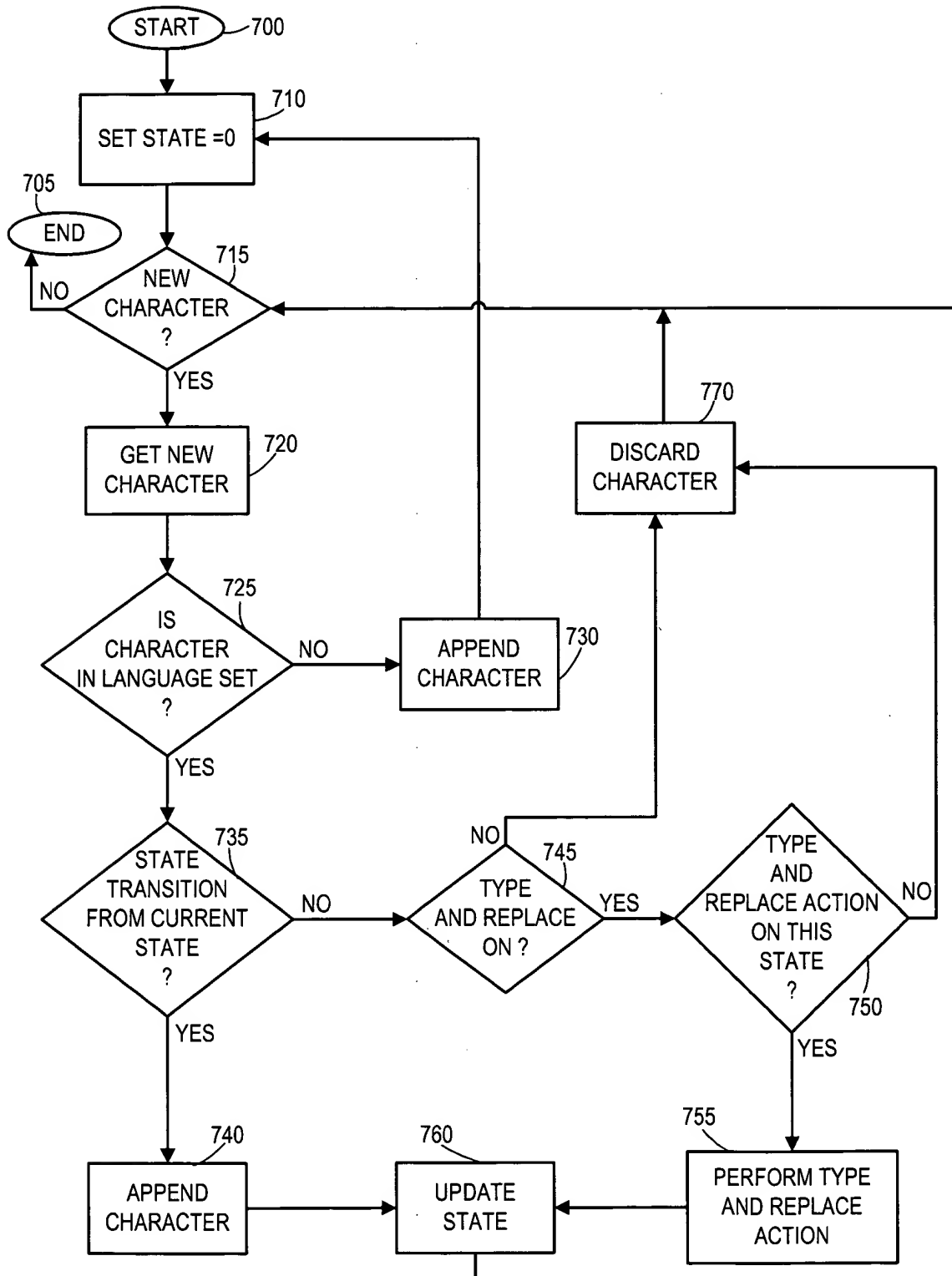


FIG. 7

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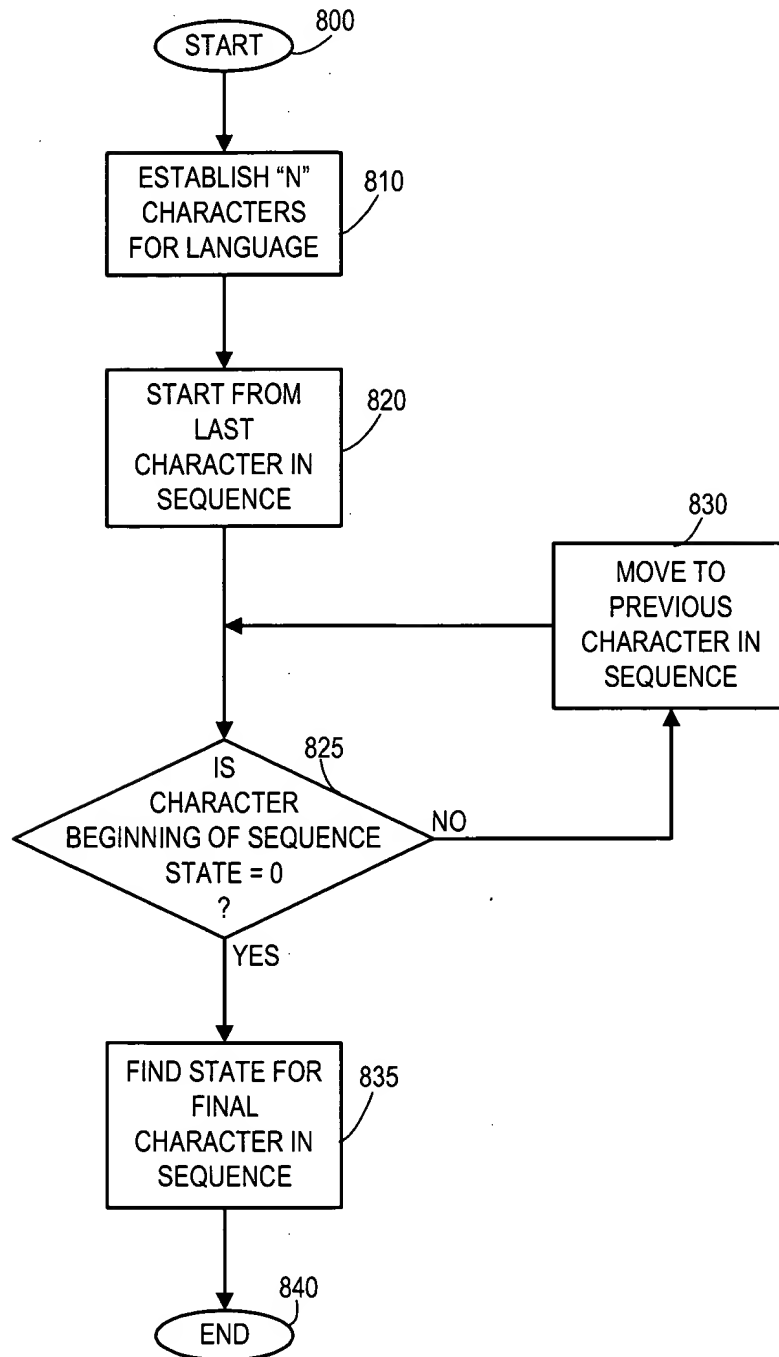


FIG. 8

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| SYMBOL     | INDEX          | ACTION  | EXAMPLE                                       |
|------------|----------------|---|---|
| Char a     | IP             | Append the character char   | AB → Ca → ABC                                 |
| Char I [n] | IP-n where n>0 | Insert the character Char at the index location (before the ith character from the right)   | ABD → Ci] → ABCD                              |
| d [1]      | IP-1           | Remove the previous character   | AB → d → A                                    |
| dn         | IP-n where n>1 | Remove the character at the index location  | ABC → d2 → AC                                 |
| Char r[1]  | IP-1           | Replace the previous character with Char  | AC → Br → AB                                  |
| Char rn    | IP-n where n>1 | Replace the character Char at the index location with the new character   | ADC → Br2 → ABC                               |
| Cxy        |                | Contextual information (this does not necessarily generate an action) for a possible character composition by the client application. In the Thai transition table "x" has the following values: "a" for composing the last 2 characters into LV3 (Sara-AE) or "b" for composing the last 2 characters into FV3 (Sara-Am). "y" indicates the number of the next transition state. | ABC → Cx2 → AD (if x composes B and C into D) |

FIG. 9

| SYMBOL | ACTION                                 | EXAMPLE  |
|--------|--|----------|
| FV3r   | Substitute the last character with FV3 | → FV3r → |

FIG. 9A

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| KEYBOARD INPUT | OUTPUT |
|----------------|--------|
| क              | क      |
| ्              | क्     |
| क              | क्क    |
| ी              | क्की   |

FIG. 10

| KEYBOARD INPUT | OUTPUT |
|----------------|--------|
| क              | क      |
| ्              | क्     |
| ी              | क्     |

FIG. 11

| KEYBOARD INPUT | OUTPUT |
|----------------|--------|
| क              | क      |
| ्              | क्     |
| य              | क्य    |
| ि              | किय    |
| ी              | कियं   |
| ो              | क्यों  |

FIG. 12